



48AJ,AK,AW,AY020-060 Single-Package Rooftop Gas Heating Units with COMFORTLINK™ Controls and Scroll Compressors

User's Information Manual

NOTE TO INSTALLER

This manual should be left with the equipment owner.

WARNING: If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- **WHAT TO DO IF YOU SMELL GAS**
 - Do not try to light any appliance.
 - Do not touch any electrical switch; do not use any phone in your building.
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - If you cannot reach your gas supplier, call the fire department.
- Installation and service must be performed by a qualified installer, service agency or the gas supplier.

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified installer, service agency, or the gas supplier.

⚠ WARNING

Before performing recommended maintenance, be sure main power switch to unit is turned off and lockout tag is installed. Electrical shock could cause personal injury.

Your combination heating/cooling unit is equipped with direct spark ignition and induced draft power combustion blower.

⚠ WARNING

Burners will light automatically. Do not attempt to light by hand; personal injury may result.

TO LIGHT UNIT

⚠ DANGER

1. Do not turn off the electrical power to unit without first turning off the gas supply.
2. Before attempting to start the gas heating section, familiarize yourself with all the procedures that must be followed.
3. Never attempt to manually light the burners on the unit with a match, lighter, or any other flame. If the electric sparking device fails to light the burners, refer to the shutdown procedures, then call your dealer as soon as possible.

If you do not follow these instructions exactly, a fire or explosion may result, causing property damage, injury, or loss of life.

See Fig. 1 and 2 for location of gas valve. Refer to Fig. 3 while performing the following steps.

1. Turn off the unit demand for cooling or heating by using the scrolling marquee. The scrolling marquee is located in the control box at the compressor end of the unit.
 - a. Push the ESCAPE key until a blank display screen is shown.
 - b. Push the DOWN arrow key until the SERVICE TEST LED is lit.
 - c. Push the ENTER key. The display will show STOP.
 - d. Push the ENTER key again. The NO/YES display will flash.
 - e. Push the UP or DOWN key to toggle the display to YES and then push ENTER. The unit will be locked off from heat, cooling or any operation. The controls will still function and the display will still operate.
2. Close the field-installed manual gas shutoff valve.
3. Turn off the electrical power to the unit using the optional disconnect or the field-installed disconnect and lock off using proper lockout and tag-out procedures.
4. Remove the gas section panels.
5. Move the switch on the gas valve to the OFF position and wait 5 minutes.

NOTE: If this is the first installation of the unit, the gas flue hoods must be installed before operating unit. These must be installed for the unit to run properly.
6. Move the switch on the gas valve to the ON position.
7. Replace the gas section access panels.
8. Turn on the electrical supply to the units.
9. Open the field-installed manual gas valve.

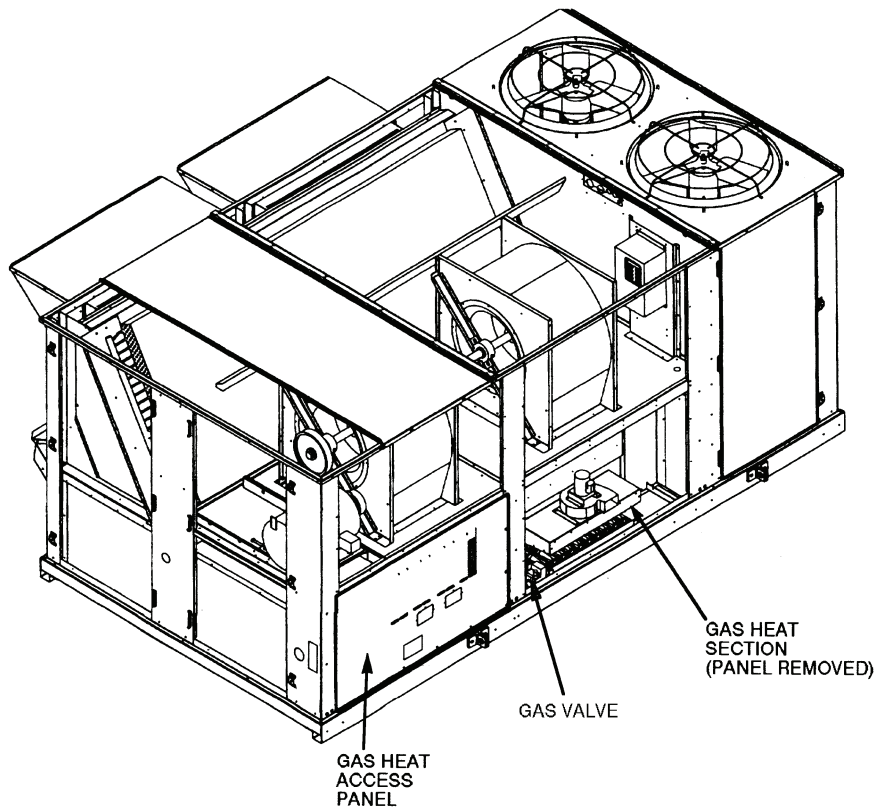


Fig. 1 — Typical Gas Section Location (48AK020 Shown)

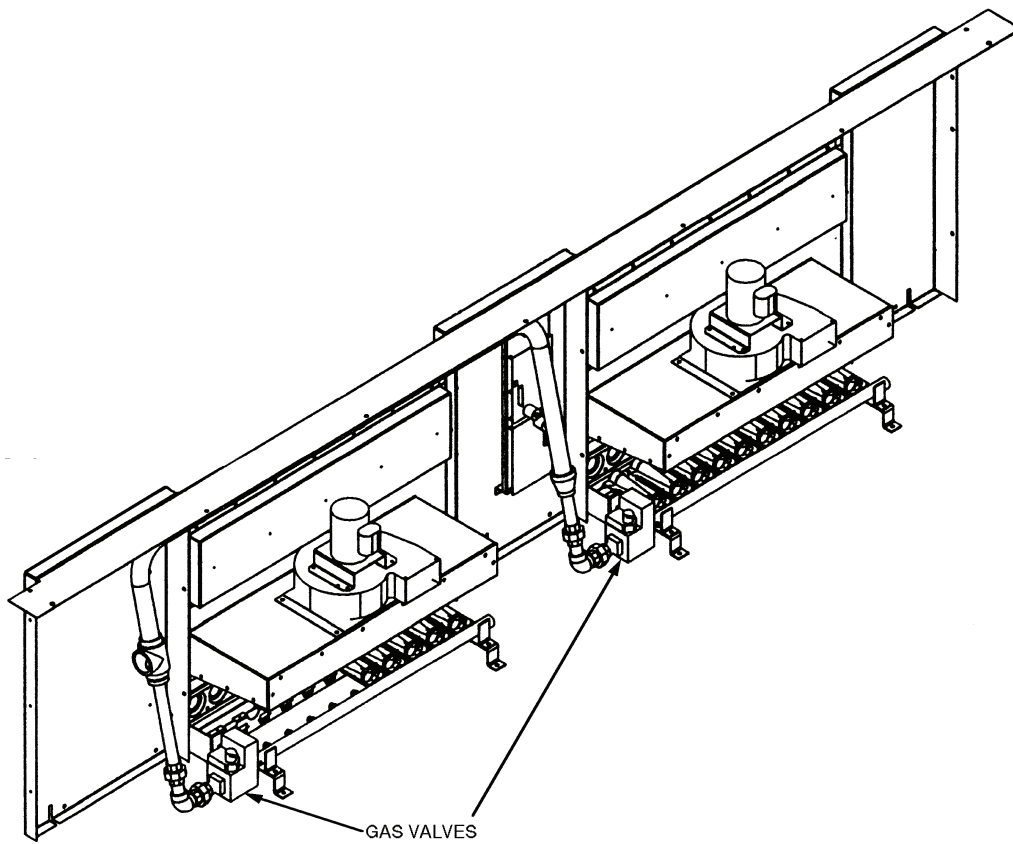
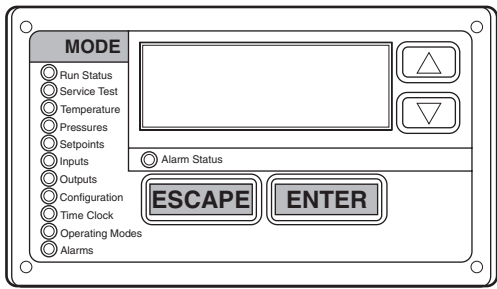
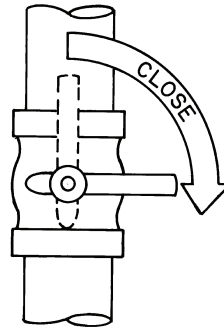


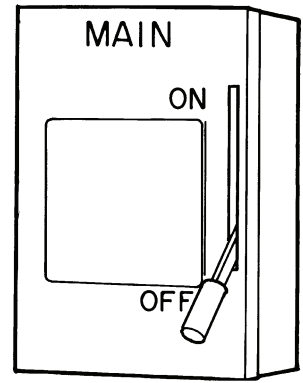
Fig. 2 — Typical Gas Valve Location (48AJ,AK,AW,AY020-050 Shown)



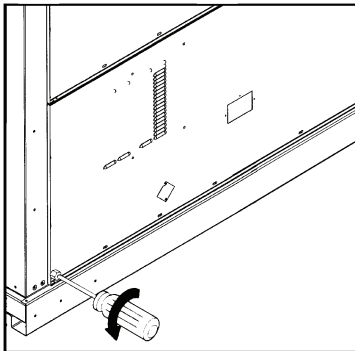
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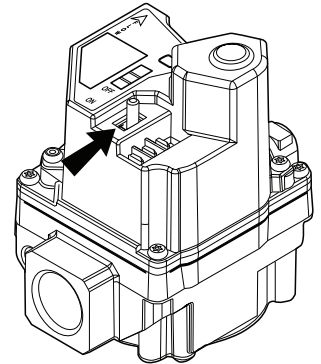
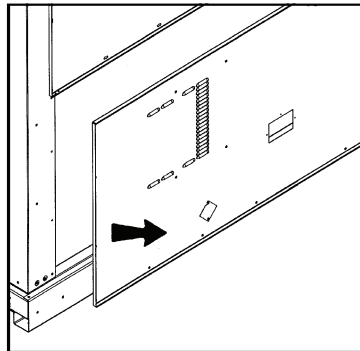
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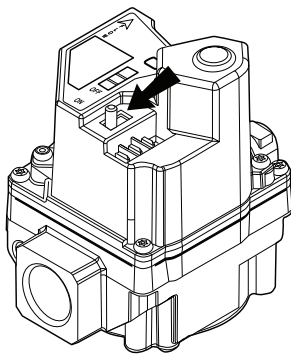
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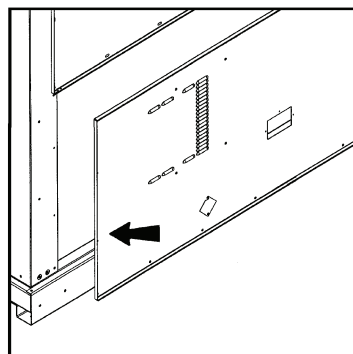
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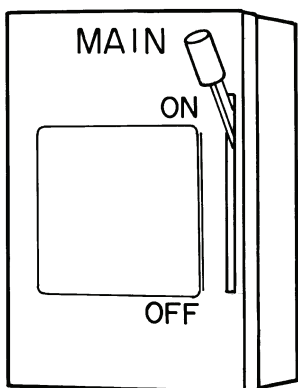
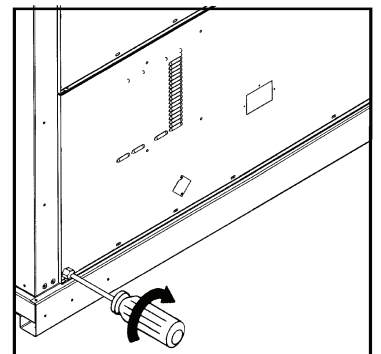
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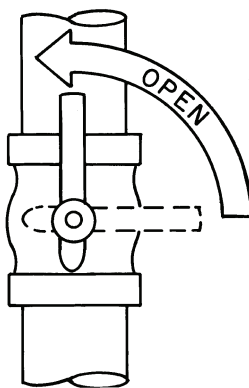
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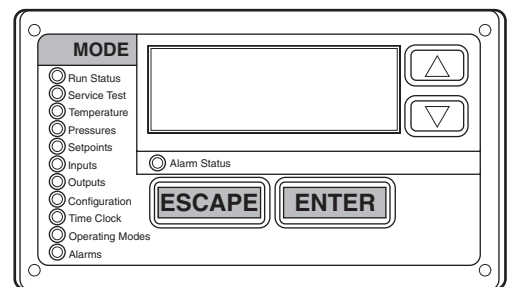
STEP 7



STEP 8



STEP 9



STEP 10

Fig. 3 — To Light Unit

10. Using the scrolling marquee, enable the unit to run using the following procedure:
 - a. Push the ESCAPE key until a blank display screen is shown.
 - b. Push the DOWN key until the SERVICE TEST LED is lit.
 - c. Push the ENTER key. The display will show STOP.
 - d. Push the ENTER key again. The NO/YES display will flash.
 - e. Push the UP or DOWN key to toggle the display to NO and then push ENTER. The unit will return to normal operation and exit SERVICE TEST mode.
11. To test the operation of the gas section, use the scrolling marquee Service Test routine to energize the gas outputs and to turn on the gas. Refer to unit Controls, Start-Up, Operation, Service and Troubleshooting literature for more information.
12. For normal operation, make sure that units with a conventional thermostat are set to heating control temperature. On VAV (variable air volume) and CV (constant volume) units with a space temperature sensor, make sure that the set points are at the normal heat set points.

⚠ WARNING

If the main burners fail to light or the blower fails to start, shut down gas heating section and call your dealer for service. Failure to follow these requirements could result in serious personal injury.

TO SHUT UNIT OFF

⚠ WARNING

1. Do not turn off the electrical power to unit without first turning off the gas supply.
 2. Never attempt to manually light the main burners on unit with a match, lighter, or any other flame. If the electric sparking device fails to light the main burners, refer to the following shutdown procedures. Call your dealer as soon as possible.
- Failure to follow these procedures can result in serious fire or personal injury.

Refer to Fig. 4 while performing the following steps:

1. Turn off the unit demand for cooling or heating by using the scrolling marquee. The scrolling marquee is located in the control box at the compressor end of the unit.
 - a. Push the ESCAPE key until a blank display screen is shown.
 - b. Push the DOWN arrow key until the SERVICE TEST LED is lit.
 - c. Push the ENTER key. The display will show STOP.
 - d. Push the ENTER key again. The NO/YES display will flash.
 - e. Push the UP or DOWN key to toggle the display to YES and then push ENTER. The unit will be locked off from heat, cooling or any operation. The controls will still function and the display will still operate.
2. Close the field-installed manual gas shutoff valve.
3. Turn off the electrical power to the unit using the optional disconnect or the field-installed disconnect and lock off using proper lockout and tag-out procedures.

4. Remove the gas section panels.
 5. Move the switch on the gas valve to the OFF position and wait 5 minutes before doing any service in the section or on the piping.
 6. Replace gas section access panels.
 7. If unit is being shut down because of a malfunction, call your dealer as soon as possible.
- If unit is being shut down because the heating season has ended, restore electrical power to the unit and reset the scrolling marquee to run mode to ensure operation of the cooling system during the cooling season.

IMPORTANT: Should overheating occur or the gas supply fail to shut off, shut off the manual gas valve to the unit before shutting off the electrical supply.

Do not use this unit if any part has been under water. Immediately call a qualified service technician to inspect the unit and to replace any part of the control system and gas control that has been under water.

MAINTAINING YOUR UNIT

All maintenance should be handled by skilled, experienced personnel. Your dealer can help you establish a standard procedure.

For your safety, keep the area around the unit clear and free of combustible materials, gasoline, and other flammable liquids and vapors.

To ensure proper functioning of the unit, the flow of combustion and ventilating air must not be obstructed from reaching the unit. Clearance of at least 4 ft on flue and condenser sides and 6 in. on all other sides is required.

ROUTINE MAINTENANCE AND CARE FOR THE EQUIPMENT OWNER

Consider the following information before maintaining or servicing equipment:

⚠ WARNING

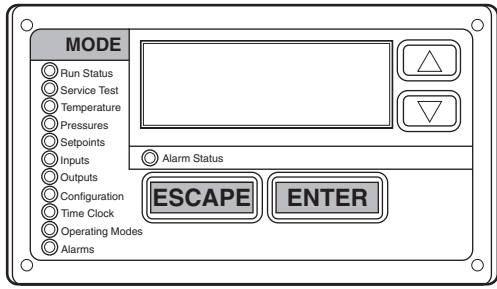
1. TURN OFF GAS SUPPLY AND THEN ELECTRICAL POWER TO YOUR UNIT BEFORE SERVICING OR PERFORMING MAINTENANCE.
2. Do not turn off electrical power to this unit without first turning off the gas supply.
3. When removing access panels or performing maintenance functions inside your unit, be aware of sharp sheet metal parts and screws. Although special care has been taken to reduce sharp edges inside the unit, be extremely careful when handling parts or reaching into the unit.

Failure to follow these procedures can result in serious fire or personal injury.

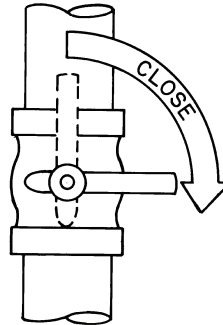
Air Filter(s) — Air filter(s) should be checked at least every 3 or 4 weeks and changed or cleaned when necessary. Replace the air filters with 20 x 24 x 2-in. size filters. The filter access panel is located at the end of the unit opposite of the condenser section. The access door is labeled to indicate that it is the filter access door.

To replace or inspect filters:

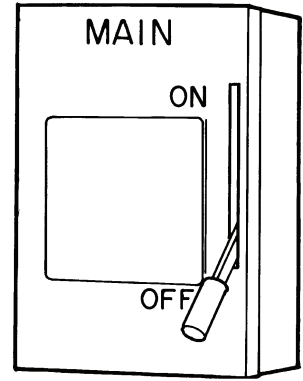
1. Loosen the 3 latches securing the filter access door and open door.
2. Remove the bolt securing the inner access panel, located behind the filter access door, using care not to lose the bolt.
3. Remove the inner access panel.



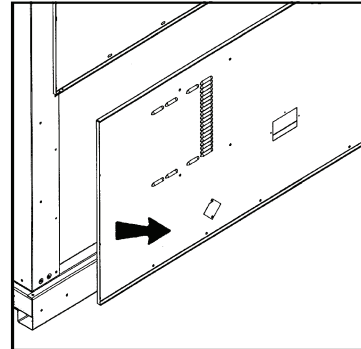
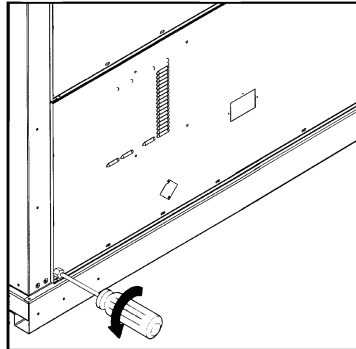
STEP 1



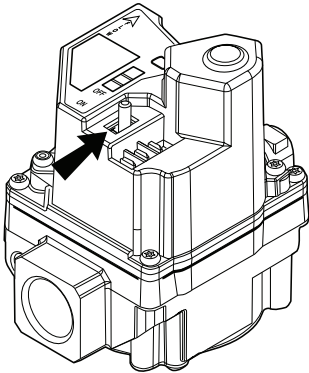
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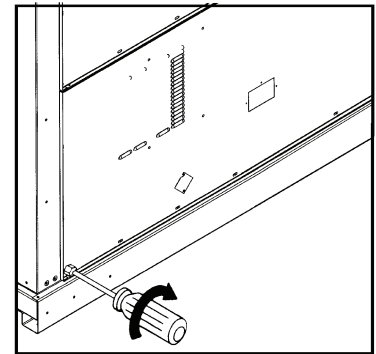
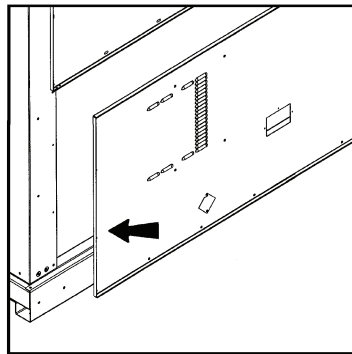
STEP 3



STEP 4



STEP 5



STEP 6

Fig. 4 — To Shut Unit Off

4. Slide the black plastic filter retainer towards you and remove.
5. Remove filters by pulling toward you and away from the filter track.
6. A filter removal rod is shipped taped to the partition located near the bottom filter track. The filter removal rod will aid in the removal of filters beyond the reach of the service person.
7. Inspect or replace filters.
8. Return filters to filter tracks. Note direction of airflow arrows on filter frame.
9. Reinstall the black plastic filter retainer.
10. Place the filter removal rod back on the partition for future use.
11. Reinstall inner panel.
12. Reinstall bolt securing the inner panel.
13. Close filter access panel and tighten latches.

If you have difficulty in locating your air filter or if you have questions concerning proper filter maintenance, contact your dealer for instructions. When replacing your unit filters, always use the same size and type of filter that was originally supplied by the installer.

Units with outdoor air capability have a cleanable filter for the outdoor air. This filter should be checked annually and cleaned as necessary with steam or hot water and a mild detergent. Do not use throwaway filters in place of cleanable filters.

⚠ WARNING

Never operate your unit without filters in place. Failure to heed this warning may result in damage to the blower motor and/or compressor. An accumulation of dust and lint on internal parts of your unit can cause loss of efficiency and, in some cases, fire.

Heat Exchanger — To ensure dependable and efficient heating operation, the heat exchanger should be checked by a qualified maintenance person before each heating season and cleaned when necessary. This checkout should not be attempted by anyone not having the required expertise and equipment to do the job properly. Checking and/or cleaning the heat exchanger involves removing the gas controls assembly, the flue collector box, and the flue collector box cover. When finished, the gas controls assembly must be reinstalled for proper operation. Also, the flue collector box cover must be replaced correctly so that a proper seal is maintained. Refer to unit installation instructions for correct procedure. Contact your dealer for the required periodic maintenance.

Fans and Belts — Periodically check the condition of the fan wheels and housings, and belt tension. When service is necessary, call your dealer.

Indoor-Fan Motor, Outdoor-Fan Motor, and Combustion Fan Motor — Lubrication is not recommended. Bearings will not require lubrication for at least 5 years of normal operation. After 5 years, motor life can be extended by having the motors serviced at an authorized motor service shop.

Fan Shaft Bearings — The bearings should be greased with Shell Alvania no. 2 grease or equivalent. The bearings will need to be greased annually, dependent on fan usage. Do not grease more than once a year.

Evaporator and Condenser Coils — Cleaning of the coils should be done by qualified service personnel. Contact your dealer for the required annual maintenance.

Condensate Drain — The drain pan and condensate drain line should be checked and cleaned at the same time the cooling coils are checked by your dealer.

Compressor — All compressors are factory supplied with a normal charge of the correct type of refrigeration-grade oil in them and should not require additional oil.

Condenser Fan

⚠ WARNING

Do not poke sticks, screwdrivers, or any other object into revolving fan blades. Severe bodily injury may result.

The fan must be kept free of all obstructions to ensure proper cooling. Contact your dealer for any required service.

Electrical Controls and Wiring — Electrical controls are difficult to check without proper instrumentation. If there are any discrepancies in the operating cycle, contact your dealer and request service.

Refrigerant Circuit — The refrigerant circuit is difficult to check for leaks without the proper equipment. If inadequate cooling is suspected, contact your local dealer for service.

Combustion Area and Vent System — The combustion area and vent system should be visually inspected before each heating season. The normal accumulation of dirt, soot, rust, and scale can result in loss of efficiency and improper performance if allowed to build up.

⚠ CAUTION

If your unit makes any unusual or especially loud noises during heating, shut down the heating section and call your dealer.

See Fig. 1 and 2 and proceed as follows to inspect the combustion area and power-venting system of your unit.

1. Turn off gas supply to your unit.
2. Turn off electrical power to your unit.
3. Remove gas section access panels.
4. Using a flashlight, carefully inspect the burner areas for dirt, soot, rust, or scale.

⚠ CAUTION

If dirt, soot, rust, or scale accumulations are found, call your dealer and do not operate your heating section.

5. When you have completed your inspection, follow the To Light Unit section in this manual to restore your unit to operation.
6. Observe unit heating operation. Watch the burner flame to see if it is bright blue. If you observe a suspected malfunction or if the flame is not bright blue, call your dealer.

⚠ WARNING

Components in heat section may be hot after unit has been started. When observing flame, be careful not to get close to or touch heating components. Serious personal injury may result.

7. Replace gas section access panels.

Unit Panels — After performing any maintenance or service on the unit, be sure all panels are securely fastened in place to prevent rain from entering unit cabinet and to prevent disruption of the correct unit airflow pattern.

REGULAR DEALER MAINTENANCE

In addition to the type of routine maintenance you might be willing to perform, your unit should be inspected regularly by a properly trained service technician. An inspection (preferably each year, but at least every other year) should include the following:

1. Inspection of all flue product passages — including the burners, heat exchanger, and flue collector box.
2. Inspection of all combustion and ventilation-air passages and openings.
3. Close inspection of all gas pipes leading to and inside your unit.
4. Inspection and if required, cleaning of the condenser and evaporator coils.
5. Inspection and if required, cleaning of the condensate drain pan.
6. Inspection and cleaning of blower wheel housing and motor.
7. Inspection of all supply and return-air ducts for leaks, obstructions, and insulation integrity. Any problems found should be resolved at the time of inspection.
8. Inspection of the unit base for cracks, gaps, etc., which may cause a hazardous condition.
9. Inspection of the unit casing for signs of deterioration.
10. Inspection of all electrical wiring and components to ensure proper connection.
11. Inspection for leaks in the refrigerant circuit. Pressure-check to determine appropriate refrigerant charge.
12. Inspection of fan wheels and housings, belt tension, and fan motor shaft bearings.
13. Operational check of the unit to determine working conditions. Repair or adjustment should be made at the time of inspection.

Your servicing dealer may offer an economical service contract that covers seasonal inspections. Ask for further details.

Complete service instructions can be found in the unit Controls, Start-Up, Operation, Service and Troubleshooting literature.

BEFORE YOU CALL FOR SERVICE, CHECK FOR PROBLEMS THAT CAN BE EASILY SOLVED

If insufficient heating or cooling is suspected:

() Check for sufficient airflow. Check the air filter for dirt. Check for blocked return or supply-air grilles. Be sure they are open and unobstructed. If these checks do not reveal the cause, call your servicing dealer.

If your unit is not operating at all, check the following list for easy solutions:

() If using a thermostat, check to be sure that your thermostat temperature set point is above the indoor temperature during the heating season, or below the indoor temperature during the cooling season. Be sure the thermostat mode is in the proper AUTO, HEAT, or COOL mode and not in the OFF mode.

() Check scrolling marquee to be sure unit is not in SERVICE TEST mode. Check set points are properly set.

() Is the electrical supply switch ON? Are any fuses blown or has the circuit breaker tripped?

() During the heating season, check the external manual shutoff valve. Is this lever parallel with the pipe, indicating that the valve is open? Or is the lever at the right angle, indicating that the valve is closed? If closed, has the gas been shut off for safety reasons? Otherwise, you may open the valve and follow the start-up procedures listed in this manual.

NOTE: Before proceeding with the next check, turn OFF the electrical power supply to the unit. Remove the gas section access panels.

() During the heating season, check the switch on the gas valve. Is it in the ON position? If it is not, be sure it has not been turned off for the purpose of safety. If no safety hazards are present, follow the start-up procedures in this manual.

() If your unit still fails to operate, call your servicing dealer for troubleshooting and repairs. Specify the model and serial numbers of your unit. (Record them in this manual in the space provided.) If the dealer knows exactly which unit you have, he may be able to offer suggestions over the phone, or save valuable time through knowledgeable preparation for the service call.

IN CASE OF TROUBLE

If, after performing the above checks, unit performance is unsatisfactory, shut off the unit and call your dealer.

Dealer's Name _____

Telephone No _____

Unit Model _____

Unit Serial Number _____

